

Attorney's Docket No. 114580-020001

REMARKS

Reconsideration and allowance of the above referenced application are respectfully requested.

Claim 20 stands rejected under 35 USC 112, first paragraph, as allegedly not being supported by the specification. The amendments to claim 20 obviate this rejection.

Claims 1, 3, 6 and 7 are rejected under 35 USC 102 as allegedly being anticipated by Nguyen and claim 20 is similarly rejected. The remaining claims are rejected as being obvious over various combinations of prior art. In response, the claims are amended herein.

Amended claim 1 is directed to the contact hole barrier layer being formed after the wet etching step so that the contact hole barrier layer fills voids in the first barrier layer which were caused by the wet etching.

Claim 20 is directed to the contact hole barrier layer being formed before the wet etching step and includes applying a second contact hole barrier layer on the first contact hole barrier layer, to compensate for any undesirable reduction in thickness of the first contact hole barrier layer caused by the wet etching.

Amended claim 1 is similar to previous claim 19 and also corresponds to previous claim 1 amended to incorporate the

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subject matter of previous claim 2.

Claim 2 stands rejected as not being inventive over the combination of Nguyen and Kim.

Regarding the combination of Nguyen and Lee, the rejection submits (see point 8) that Lee discloses a contact hole barrier layer being formed after a wet etch step so that the contact hole barrier layer fills voids in the barrier layer caused by the wet etching, and thus that all the features of claim 2 are found in the combination of Nguyen and Lee. However, even though a contact hole barrier layer is used in the method of Lee, it is arranged purposely not to fill voids caused by wet etching. This can be seen clearly in Figures 5, 6, 10 and 11 (in which the barrier layer 180 does not extend into undercut 173). Also the contact hole barrier layer in Lee is not continuous between the sides and bottom of the contact hole. Thus, the combination of Nguyen and Lee does not, in fact, disclose all the features of new claim 1. In addition, there is no teaching in Nguyen in view of Lee that the contact hole barrier layer should be modified to fill the voids caused by wet etching. In fact, Lee's page 3, paragraph 31, explains that the barrier layer is deliberately not formed where the undercut is formed, and that the barrier layer is formed discontinuously. Thus, not only is there no teaching to suggest modifying the arrangement so that it falls within the claimed subject matter

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In fact, paragraph 31 of Lee teaches away from such modification. Thus, claim 1 is inventive over the Nguyen and Lee combination.

Regarding the combination of Nguyen and Kim, similar points can be made. The rejection submits (see point 11) that Kim discloses forming a contact hole barrier layer after a wet etch step, so that the combination of Nguyen and Kim discloses all the features of claim 19. However, while Kim does disclose a wet etch step (paragraph 21, lines 8 to 11) followed by formation of a barrier layer (paragraph 23, lines 4 to 5), there is no suggestion in Kim that the contact hole barrier layer fills voids in a barrier layer caused by the wet etch. Thus, claim 1 is inventive over the Nguyen and Kim combination.

Amended claim 20 is similar to previous claim 1 amended to incorporate the subject matter of previous claims 3 and 4. The rejection objected that previous claim 4 was not inventive over the combination of Nguyen and Kim. This contention is respectfully traversed.

Although Nguyen does arguably disclose a second contact hole barrier layer being formed and Kim does disclose a wet etch step, there is no suggestion in either that the second contact hole barrier layer is formed on the first contact hole barrier layer, to compensate for any undesirable reduction in thickness of the contact hole barrier layer formed by the wet etching. In

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fact, in Kim, the wet etch step is performed first followed by formation of both first and second contact hole barrier layers. So, the second layer cannot thicken the first to compensate for thinning caused by the wet etch step because the first contact hole barrier layer is formed after the wet etch step. Thus, the combination of Nguyen and Kim does not, in fact, disclose all the features of amended claim 20. Therefore, we believe that amended claim 20 is inventive over the Nguyen and Kim combination.

It is believed that all of the pending claims have been addressed in this paper. However, failure to address a specific rejection, issue or comment, does not signify agreement with or concession of that rejection, issue or comment. In addition, because the arguments made above are not intended to be exhaustive, there may be reasons for patentability of any or all pending claims (or other claims) that have not been expressed. Finally, nothing in this paper should be construed as an intent to concede any issue with regard to any claim, except as specifically stated in this paper, and the amendment of any claim does not necessarily signify concession of unpatentability of the claim prior to its amendment.

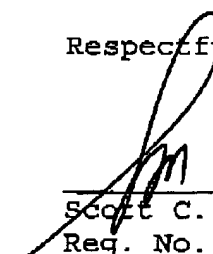
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Applicant asks that all claims be allowed. It is believed no fee is due, however, please apply any other charges or credits to Deposit Account No. 06-1050.

Respectfully submitted,

Date:

8/8/05



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